

IN THE CLAIMS

Claims 1-11 (cancelled)

Claim 12 (currently amended): A device for filtering ferromagnetic material from a fluid in which said material is suspended, comprising a magnet and a pair of metal plates, said magnet having faces of opposite magnetic polarity, each of said plates being disposed in abutment with a respective one of said magnet faces, each of said plates comprising a plurality of recesses about an outer perimeter of the plate to form radially extending magnetic pole pieces, which extend beyond an outer perimeter of said magnet faces, said plates being oriented so that said recesses and pole pieces on a first one of said plates are aligned with said recesses and pole pieces on the second of said plates, a plurality of passage means for said fluid, each extending between respective ~~wherein~~ opposed recesses on said first and second plates ~~define passage means for said fluid and wherein~~ ~~opposed said pole pieces on said first and second plates are positioned with respect to each other to define a plurality of collecting regions extending between opposed pole pieces to which ferromagnetic material is attracted and retained and~~ a plurality of regions of magnetic attraction to which ferromagnetic material is attracted and retained, said regions of magnetic attraction being spaced apart around the periphery of the plates, each said region of magnetic attraction extending between opposed said pole pieces and adjacent regions of magnetic attraction being separated by one of said plurality of passage means.

Claim 13 (previously presented): A device as claimed in claim 12, wherein said opposed recesses on said first and second plates also define regions from which ferromagnetic material is repelled.

Claim 14 (previously presented): A device as claimed in claim 12, wherein said magnet and said metal plates are each provided with a central hole which is adapted to receive a tube through which fluid can pass, said tube providing means for isolating, within the device, fluid passage in said tube from fluid flow through said recesses.

Claim 15 (previously presented): A device as claimed in claim 12, further comprising a distribution plate having a plurality of apertures which are alignable with said recesses, said apertures being the only passage means of fluid to said metal plates.

Claim 16 (previously presented): A device as claimed in claim 15, wherein said distribution plate, said magnet and said metal plates are each provided with a central hole which is adapted to receive a tube through which fluid can pass, said tube providing means for isolating, within the device, fluid passage in said tube from fluid flow through said recesses.

Claim 17 (previously presented): A device as claimed in claim 16, wherein an outer face of said tube is provided with a recess which can receive retaining means which is able to keep said distribution plate in abutment with an axially closer of said metal plates.

Claim 18 (previously presented): A device as claimed in claim 12, wherein the distribution plate is made of a non-ferromagnetic material.

Claim 19 (previously presented): A device as claimed in claim 12, wherein each of said recesses is further provided with one or a plurality of slots.

Claim 20 (previously presented): A device as claimed in claim 12, wherein an outer edge of each of said pole pieces is further provided with one or a plurality of slots.

Claim 21 (previously presented): A device as claimed in claim 12, wherein the outer edges of said facing pole pieces are curved towards one another.

Claim 22 (previously presented): A device as claimed in claim 12, further comprising means for maintaining said recesses and said apertures in alignment.

Claim 23 (previously presented): A device as claimed in claim 12, wherein said magnet comprises a material which will generate a magnetic field between said metal plates of sufficient strength to attract ferromagnetic material from fluid passing therebetween.

Claim 24 (previously presented): A device as claimed in claim 12, wherein the metal plate which is impinged first by fluid flow through the device is thicker than said other metal plate through which said fluid leaves the device.

Claim 25 (previously presented): A device as claimed in claim 12, further comprising a housing having means at one end for receipt by a containing means of said fluid, said containing means comprising an input means and an output means, said housing having means at the other end to receive a fluid filter, an output of which fluid filter is continuous with a fluid passageway passing through an aperture in said magnet and also continuous with the input means to said containing means, said output means from said containing means being continuous in said recesses in said metal plates.

Claim 26 (previously presented): A device as claimed in claim 15, further comprising a housing having means at one end for receipt by a containing means of said fluid, said containing means comprising an input means and an output means, said housing having means at the other end to receive a fluid filter, an output of which filter is continuous with a tube extending through an aperture in said magnet and also continuous with the input means to said containing means, said output means from said containing means being continuous with said apertures in said distribution plate and said recesses in said metal plates.

Claim 27 (currently amended): A magnetic filter device for filtering ferromagnetic material from a fluid in which said material is suspended, comprising a fluid filter, a magnet and a pair of metal plates, said magnet having faces of opposite magnetic polarity, each of said plates being disposed in abutment with a respective one of said magnet faces, each of said plates comprising a plurality of recesses about an outer perimeter of the plate to form radially extending magnetic pole pieces, which extend

beyond an outer perimeter of said magnet faces, said plates being oriented so that said recesses and pole pieces on a first of said plates are aligned with said recesses and pole pieces on the second of said plates, a plurality of passage means for said fluid, each extending between respective wherein opposed recesses on said first and second plates, said passage means being continuous with fluid passage through said recesses, define passage means for said fluid and wherein said opposed pole pieces on said first and second plates are positioned with respect to each other to define a plurality of collecting regions extending between opposed pole pieces to which ferromagnetic material is attracted and retained, said filter having passage means for said fluid which is continuous with fluid passage through said recesses and a plurality of regions of magnetic attraction to which ferromagnetic material is attracted and retained, said regions of magnetic attraction being spaced apart around the periphery of the plates, each said region of magnetic attraction extending between opposed said pole pieces and adjacent regions of magnetic attraction being separated by one of said plurality of passage means.

Claim 28 (previously presented): A magnetic filter device as claimed in claim 27, wherein said opposed recesses on said first and second plates also define regions from which ferromagnetic material is repelled.

Claim 29 (previously presented): A magnetic filter device as claimed in claim 27, wherein said fluid filter is positioned downstream of said magnet and said pair of metal plates.

Claim 30 (currently amended): A process for filtering ferromagnetic material from a fluid in which said material is suspended, comprising passing said fluid through a device for filtering ferromagnetic material from a fluid in which said material is suspended, comprising a magnet and a pair of metal plates, said magnet having faces of opposite magnetic polarity, each of said plates being disposed in abutment with a respective one of said magnet faces, each of said plates comprising a plurality of recesses about an outer perimeter of the plate to form radially extending magnetic pole pieces, which extend beyond an outer perimeter of said magnet faces, said plates being oriented so that said

recesses and pole pieces on a first one of said plates are aligned with said recesses and pole pieces on the second of said plates, a plurality of passage means for said fluid, each extending between respective ~~wherein~~ opposed recesses on said first and second plates ~~define passage means for said fluid and wherein opposed said pole pieces on said first and second plates are positioned with respect to each other to define a plurality of collecting regions extending between opposed pole pieces to which ferromagnetic material is attracted and retained and~~ a plurality of regions of magnetic attraction to which ferromagnetic material is attracted and retained, said regions of magnetic attraction being spaced apart around the periphery of the plates, each said region of magnetic attraction extending between opposed said pole pieces and adjacent regions of magnetic attraction being separated by one of said plurality of passage means.

Claim 31 (previously presented): A process for filtering ferromagnetic material from a fluid in which said material is suspended, comprising passing said fluid through the device recited in claim 33.

Claim 32 (currently amended): A device for filtering ferromagnetic material from a fluid in which said material is suspended, comprises a magnet and a pair of metal plates, said magnet having faces of opposite magnetic polarity, said plates being disposed in abutment with said faces respectively, each plate having a plurality of recesses about an outer perimeter of each plate to form radially extending magnetic pole pieces, which extend beyond an outer perimeter of the magnet faces, said plates being oriented so that the recesses and pole pieces on one plate are axially aligned with those recesses and pole pieces on the other plate, a plurality of passage means for said fluid, each extending between respective ~~wherein axially opposite~~ opposed recesses on said first and second plates, ~~define passage means for said fluid and also regions from which said ferromagnetic material is repelled, and wherein said pole pieces define regions to which ferromagnetic material is attracted and retained~~ a plurality of regions of magnetic attraction to which ferromagnetic material is attracted and retained, said regions of magnetic attraction being spaced apart around the periphery of the plates, each said region of magnetic attraction extending between opposed said pole pieces and adjacent

regions of magnetic attraction being separated by one of said plurality of passage means, and a plurality of regions of magnetic repulsion, each located between two adjacent said regions of magnetic attraction, from which ferromagnetic material is repelled towards an adjacent region of magnetic attraction, said device being further provided with a distribution plate having a plurality of apertures which are axially alignable with said recesses, said apertures being the only passage means of fluid to said metal plates, wherein the distribution plate, the magnet and said metal plates are each provided with an aperture which is adapted to receive a tube through which fluid can pass, said tube providing means for isolating, within the device, fluid passage in the tube from fluid flow through the recesses, and wherein each recess and an outer edge of each pole piece is further provided with one or a plurality of slots.

Claim 33 (currently amended): A device for filtering ferromagnetic material from a fluid in which said material is suspended, comprising:

- a magnet having a first face and a second face with said faces being of opposite magnetic polarity;

- a first plate magnetically fixed to the first face of said magnet;

- a second plate magnetically fixed to said second face of said magnet,

- said first plate having a plurality of recesses about an outer perimeter of said plate to form radially extending pole pieces which extend beyond an outer perimeter of the first face of said magnet;

- said second plate having a plurality of recesses about an outer perimeter of said plate to form radially extending pole pieces which extend beyond an outer perimeter of the second face of said magnet;

- said first and second plates being arranged so that said recesses and pole pieces of said first plate are aligned with respective recesses and pole pieces of said second plate;
- and

- a plurality of passage means for said fluid, each extending between respective wherein opposed recesses on said first and second plates; and

- ~~define passages for said fluid and wherein opposite pole pieces on said first and second plates are positioned with respect to each other to define a plurality of collecting regions~~

extending between opposed pole pieces to which said ferromagnetic material is attracted and retained a plurality of regions of magnetic attraction to which ferromagnetic material is attracted and retained, said regions of magnetic attraction being spaced apart around the periphery of the plates, each said region of magnetic attraction extending between opposed said pole pieces and adjacent regions of magnetic attraction being separated by one of said plurality of passage means.

Claim 34 (previously presented): The device as recited in claim 33 wherein the recesses in each of said first and second plates open out at spaced intervals about a peripheral edge of respective plates.

Claim 35 (previously presented): The device as recited in claims 33 wherein said pole pieces have formed therein radial slots.

Claim 36 (previously presented): The device as recited in claim 33 wherein said recesses in said first and second plates are of a common configuration.

Claim 37 (previously presented): The device as recited in claim 36 wherein the pole pieces of said first and second plates are of a common configuration.

Claim 38 (previously presented): The device as recited in claim 33 wherein the pole pieces of said first and second plates are of a common configuration.

Claim 39 (previously presented): The device as recited in claim 33 wherein said metal plates are releasably fixed to said magnet and in direct contact with said magnet.

Claim 40 (previously presented): A method of filtering ferromagnetic material from a fluid in which said material is present comprising passing said material through the device of claim 34.

Claim 41 (previously presented): A method of assembling the device of claim 34 comprising fixing said first and second plates to said magnet.

Claim 42 (previously presented): The device as claimed in claim 12, wherein the opposed said pole pieces and said magnet define particle capture magnetic flux regions between facing radially extending surfaces of the opposed said pole pieces defining said collecting regions.

Claim 43 (previously presented): The device as claimed in claim 27, wherein said plurality of collecting regions are defined by magnetic flux passing between facing radially extending surfaces of the opposed said pole pieces.

Claim 44 (previously presented): The process of claim 30, wherein the opposed said pole pieces and said magnet define particle capture magnetic flux regions between facing radially extending surfaces of the opposed said pole pieces defining said collecting regions.

Claim 45 (previously presented): The device as claimed in claim 33, wherein the opposed said pole pieces and said magnet define particle capture magnetic flux regions between facing radially extending surfaces of the opposed said pole pieces defining said collecting regions.

Claim 46 (New): A device for filtering ferromagnetic material from a fluid in which said material is suspended, comprising a magnet and a pair of metal plates, said magnet having faces of opposite magnetic polarity, each of said plates being disposed in abutment with a respective one of said magnet faces, each of said plates comprising a plurality of recesses about an outer perimeter of the plate to form radially extending magnetic pole pieces, which extend beyond an outer perimeter of said magnet faces, said plates being oriented so that said recesses and pole pieces on a first one of said plates are aligned with said recesses and pole pieces on the second of said plates, wherein opposed recesses on said first and second plates define passage means for said fluid and wherein

opposed said pole pieces on said first and second plates are positioned with respect to each other to define a plurality of collecting regions extending between opposed pole pieces to which ferromagnetic material is attracted and retained, wherein each of said recesses is further provided with one or a plurality of slots.

Claim 47 (New): A device for filtering ferromagnetic material from a fluid in which said material is suspended, comprising a magnet and a pair of metal plates, said magnet having faces of opposite magnetic polarity, each of said plates being disposed in abutment with a respective one of said magnet faces, each of said plates comprising a plurality of recesses about an outer perimeter of the plate to form radially extending magnetic pole pieces, which extend beyond an outer perimeter of said magnet faces, said plates being oriented so that said recesses and pole pieces on a first one of said plates are aligned with said recesses and pole pieces on the second of said plates, wherein opposed recesses on said first and second plates define passage means for said fluid and wherein opposed said pole pieces on said first and second plates are positioned with respect to each other to define a plurality of collecting regions extending between opposed pole pieces to which ferromagnetic material is attracted and retained, wherein an outer edge of each of said pole pieces is further provided with one or a plurality of slots.

Claim 48 (New): A device for filtering ferromagnetic material from a fluid in which said material is suspended, comprising a magnet and a pair of metal plates, said magnet having faces of opposite magnetic polarity, each of said plates being disposed in abutment with a respective one of said magnet faces, each of said plates comprising a plurality of recesses about an outer perimeter of the plate to form radially extending magnetic pole pieces, which extend beyond an outer perimeter of said magnet faces, said plates being oriented so that said recesses and pole pieces on a first one of said plates are aligned with said recesses and pole pieces on the second of said plates, wherein opposed recesses on said first and second plates define passage means for said fluid and wherein opposed said pole pieces on said first and second plates are positioned with respect to each other to define a plurality of collecting regions extending between opposed pole

pieces to which ferromagnetic material is attracted and retained, where the outer edges of said facing pole pieces are curved towards one another.